



KIOXIA XD8 E1.S Series SSDs¹
9.5 mm (top) / 15 mm (middle) / 25 mm (bottom)

KIOXIA XD8 Series Gen5 E1.S SSDs deliver over 73% higher read throughput versus PCIe Gen4 E1.S*

KIOXIA XD8 Series SSD Specifications²

Support for PCIe Gen5 Performance

Sequential Read: up to 12,500 MB/s²

Sequential Write: up to 5,800 MB/s

Random Read: up to 2,300K IOPS⁴

Random Write: up to 250K IOPS

*MB/s = megabytes per second

⁴IOPS = input/output operations per second

Heatsink Flexibility

Z-thickness Options:

9.5 mm / 15 mm / 25 mm

Designed for Hyperscale Data Centers

- Supports the OCP Datacenter NVMe SSD Specification Version 2.5³
- Single-port design optimized for data center-class workloads
- Heatsink options adapt to different thermal environments
- High reliability in demanding 24x7 environments

KIOXIA Unveils Next-Generation Data Center Performance SSDs

Leverage PCIe[®] 5.0 cutting-edge performance and thermally-efficient E1.S design with NEW KIOXIA XD8 Series SSDs for cloud and hyperscale data centers

Third generation KIOXIA XD Series E1.S SSDs are designed for the next-generation of data center applications and workloads, while optimizing total cost of ownership⁴. The latest KIOXIA XD8 Series SSDs are PCIe 5.0 and NVMe[™] 2.0 specification compliant, and are designed to the Enterprise and Datacenter Standard Form Factor (EDSFF) E1.S specification. This enables KIOXIA XD8 Series SSDs to address specific requirements of hyperscale applications, including the performance, power and thermal requirements of the Open Compute Project[®] (OCP[®]) Datacenter NVMe SSD Specification Version 2.5³ for cloud-optimized storage. These SSDs will be available with 9.5 mm and 15 mm heatsink options, and the 25 mm heatsink option will be available to select customers. They also support up to 7.68 terabyte⁵ (TB) capacities and 1 Drive Write Per Day⁶ (DWPD) of endurance. KIOXIA XD8 Series SSDs represent the future of flash storage for servers and storage systems in cloud and hyperscale data centers.

Next-Generation Data Center Performance²

KIOXIA XD7P Series (7.68 TB) vs. KIOXIA XD8 Series (7.68 TB)

(PCIe Gen4 Performance vs. PCIe Gen5 Performance)



Suitable for Various Applications

- **Content Delivery Networks:** CDNs require SSDs that excel in read-intensive workloads and support services such as real-time data analytics and playbacks, which in turn play a big role in content creation and gaming.
- **Telecommunications:** Telco systems require SSDs with high transfer rates to support numerous services in many geographic locations and must operate regardless of environmental conditions.
- **Artificial Intelligence:** AI requires SSDs with high throughput performance and low latencies to address massive backend computations including training and inferencing.
- **Media Streaming:** Media streaming requires SSDs with high read bandwidths to move content to several systems and social media outlets as quickly as possible in support of many subscribers simultaneously.

Advanced Thermal Flexibility

The most common method to cool a server at present is through air cooling, which relies on numerous high-powered fans to circulate air within the chassis. There are also operating costs associated with this approach. With the advent of the EDSFF E1.S form factor, heat dissipation is an advantage over the U.2 (2.5-inch⁷) form factor.

System designers encounter various design challenges associated with space limitations. The E1.S form factor, with its compact size, provides flexible configuration options in support of limited space to work within. The 9.5 mm and 15 mm heatsink options provide well-rounded features, making them ideal storage device choices to integrate into a wide range of applications, especially in 1U chassis. The 25 mm heatsink option is exceptional at managing heat, especially in demanding environments where overheating is an ongoing challenge for high-performance SSDs. As an SSD form factor with standardized built-in heatsinks, the E1.S form factor provides unparalleled thermal flexibility without additional cooling equipment. The 9.5 mm, 15 mm and 25 mm E1.S heatsink options for KIOXIA XD8 Series SSDs include the following specifications:



Heatsink Specifications	E1.S 9.5 mm	E1.S 15 mm	E1.S 25 mm
Thickness x Width x Length (mm)	9.5 x 33.75 x 118.75	15.0 x 33.75 x 118.75	25.0 x 33.75 x 118.75
Active Power (typical)	21 W (7.68TB)		
Performance	12,500 MB/s (Sequential Read)		

Optimized for Data Security⁸

KIOXIA XD8 Series E1.S SSDs offer a range of data encryption technologies, including standard Trusted Computing Group[®] (TCG) Opal v2.0⁹ and OCP[®] v2.5 Compliant Security Features, to help address the risk of data breaches or theft.

TCG Opal v2.0	OCP v2.5
This specification enhances data security on SSDs with a specific focus on self-encrypting drives ¹⁰ (SEDs) where strong encryption of stored data is achieved through advanced cryptographic techniques.	This OCP specification was developed by the OCP cooperative community to help ensure that OCP-compliant data centers, cloud devices, appliances, etc., meet the high security benchmarks.

More Information

<https://americas.kioxia.com/en-us/business/ssd/data-center-ssd.html>.

NOTES:

- ¹ The KIOXIA XD Series SSD product images shown are representations of the design model and not accurate product depictions.
- ² KIOXIA XD8 Series and KIOXIA XD7P Series SSD performance specifications are publicly available and accurate as of this publication date. Specifications are subject to change. Read and write speed may vary depending on the host device, read and write conditions, and file size.
- ³ KIOXIA XD8 Series SSDs are designed to support the OCP Datacenter NVMe SSD Specification Version 2.5 (not all features are supported).
- ⁴ Total cost of ownership optimization for E1.S SSDs includes a form factor design that requires less spending on cooling, and its smaller footprint reduces physical space and the number of server racks.
- ⁵ Definition of capacity: KIOXIA Corporation defines a megabyte (MB) as 1,000,000 bytes, a gigabyte (GB) as 1,000,000,000 bytes, a terabyte (TB) as 1,000,000,000,000 bytes and a petabyte (PB) as 1,000,000,000,000,000 bytes. A computer operating system, however, reports storage capacity using powers of 2 for the definition of 1Gbit = 2³⁰ bits = 1,073,741,824 bits, 1GB = 2³⁰ bytes = 1,073,741,824 bytes, 1TB = 2⁴⁰ bytes = 1,099,511,627,776 bytes and 1PB = 2⁵⁰ bytes = 1,125,899,906,842,624 bytes and therefore shows less storage capacity. Available storage capacity (including examples of various media files) will vary based on file size, formatting, settings, software and operating system, and/or pre-installed software applications, or media content. Actual formatted capacity may vary.
- ⁶ DWPD: Drive Write(s) Per Day: One full drive write per day means the drive can be written and re-written to full capacity once a day, every day, for the specified lifetime. Actual results may vary due to system configuration, usage, and other factors.
- ⁷ 2.5-inch indicates the form factor of the SSD and not the drive's physical size.
- ⁸ Optional security feature compliant drives are not available in all countries due to export and local regulations.
- ⁹ SED optional model supports TCG Opal SSC except for some features.
- ¹⁰ A self-encrypting drive (SED) encrypts/decrypts data written to and retrieved from an SSD via a password-protected alphanumeric key, continuously encrypting and decrypting the data.

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